Cardiac regeneration in model organisms.

Journal: Curr Treat Options Cardiovasc Med

Publication Year: 2014

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PubMed link: 24496965

Funding Grants: CHLA Stem Cell Training Grant

Public Summary:

Scientific Abstract:
OPINION STATEMENT: Myocardial infarction is the most common cause of cardiac injury in humans and results in acute loss of large numbers of myocardial cells. Unfortunately, the mammalian heart is unable to replenish the cells that are lost following a myocardial infarction and an eventual progression to heart failure can often occur as a result. Regenerative medicine based approaches are actively being developed; however, a complete blueprint on how mammalian hearts can regenerate is still missing. Knowledge gained from studying animal models, such as zebrafish, newt, and neonatal mice, that can naturally regenerate their hearts after injury have provided an understanding of the molecular mechanisms involved in heart repair and regeneration. This research offers novel strategies to overcome the limited regenerative response observed in human patients.